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THE DEVELOPMENT OF A FACILITATIVE ENVIRONMENT FOR LEARNI.. AND RESEARCH THROUGH R AND I UNITS IN THE SECONDARY SCHOOL, 1966-1967.

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THIS PAPER DESCRIBES THE NATURE AND PURPOSE OF THE R AND I UNIT IN THE SECONDARY SCHOOL. THE RESEARCH AND DEVELOPMENT ACTIVITIES OF VARIOUS UNITS IN THE SUBJECT-MATTER AREAS OF SCIENCE, ENGLISH, MATHEMATICS, SOCIAL STUDIES, AND PHYSICAL EDUCATION IN FOUR WISCONSIN SCHOOL SYSTEMS ARE BRIEFLY DISCUSSED. EA 001 022 IS A RELATED DOCUMENT. (HM)

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THE DEVELOPMENT OF A FACILITATIVE ENVIRONMENT FOR LEARNING AND RESEARCH THROUGH R & I UNITS IN THE SECONDARY SCHOOL, 1966–1967

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FOREWORD

Schools, like other social institutions, tend to settle into patterns of organization and operation until the dynamic forces of social change precipitate the need for new patterns. It is then that a progressive society seeks to break the conventional patterns and to mold new patterns to satisfy the emerging needs.

This paper describes a successful attempt to modify conventional patterns in the secondary school through the implementation of the Research and Instruction Unit (R and I Unit) in secondary school settings. The cooperative efforts of secondary school personnel and personnel from the Wisconsin Research and Development Center for Cognitive Learning are resulting in new patterns for secondary school education. These new patterns are the subject of this paper.

Richard J. Smith

CONTENTS

		page
I	The Nature and Purpose of the R & I Unit in the Secondary School	1
II	The Introduction of the R & I Unit to the Secondary School	2
	Abraham Lincoln Junior High School, Madison, Wisconsin	4
	James Madison Memorial Junior-Senior High School, Madison, Wisconsin	5
	Marquette Junior High School, Madison, Wisconsin	7
	Washington and Wilson Junior High Schools, Abraham Lincoln Senior High School, Manitowoc, Wisconsin	8
	Starbuck Junior High School, Racine, Wisconsin	8
	Silverbrook Junior High School, West Bend, Wisconsin	9
III	Summary	10
IV	Projection	11

I

THE NATURE AND PURPOSE OF THE R & I UNIT IN THE SECONDARY SCHOOL

The development of R & I Units in secondary schools is a function of Program 3 of the Wisconsin Research and Development Center for Cognitive Learning—"Facilitative Environments." As such, it incorporates the foci of that program within the framework of Project MODELS at the junior and senior high school levels. The specific objectives of Program 3 are (a) to develop and test organizations that facilitate research and development activities on cognitive learning in schools; and (b) to develop and test the effectiveness of the means whereby schools select, introduce, and utilize innovations.

Project MODELS (Maximizing Opportunities for Development and Experimentation on Learning in the Schools) is being implemented within the framework of R & I Units. Information relative to Project MODELS and R & I Units is presented in five reports of the R and D Center:

1. Klausmeier, H. J., Goodwin, W. L., & Cook, Doris M. Project MODELS in Action, 1965-1966.
2. Klausmeier, H. J., Goodwin, W. L., Prasch, J., & Goodson, M. R. Project MODELS: Maximizing opportunities for development and experimentation in learning in the schools. ***Occasional Paper No. 3.***
3. Cook, Doris M., Klausmeier, H. J., Cook, R., & Loose, Caroline A. Guidelines for initiating an R & I Unit. ***Working Paper No. 1.***
4. Klausmeier, H. J., Cook, Doris M., Goodwin, W. L., Tagatz, G. E., & Pingel, L. Individualizing instruction in language arts through development and research in R & I Units of local schools, 1965-1966. ***Technical Report No. 19.***
5. Wardrop, J. L., Tagatz, G. E., Klausmeier, H. J., Kennedy, Barbara J., and Cook, Doris M. A plan for field testing R & I Units. ***Working Paper No. 4.***

The essence of the Research and Instruction Unit is the reorganization of the school. New relationships are established among central staff members, subject matter consultants, building principals, teachers and noncertified personnel. New roles such as the Learning Specialist and Units Coordinator are assumed by people judged to possess leadership and organizational abilities. All school personnel combine their talents and responsibilities with educational specialists from the Research and Development Center staff, and as a unit this group works to build an instructional program based on the best available knowledge regarding student groupings, physical facilities, organization and sequencing of subject matter, and cognitive learning. The roles and responsi-

bilities of various personnel in R & I Units are outlined in *Working Paper No. 5* from the Wisconsin Research and Development Center for Cognitive Learning.[1]

Although the responsibilities assumed by the R & I Unit members are varied, all efforts are directed toward two major objectives (1) the development of an improved instructional program for cognitive learning and (2) continual improvement of that program through research concerned with cognitive learning in that school setting. And the essence of the operation used to achieve these objectives is a teamwork approach with each member of the team providing his contribution.

II

THE INTRODUCTION OF THE R & I UNIT TO THE SECONDARY SCHOOL

In June of 1966 preparation for providing facilitative environments for research and development in secondary schools was begun in an institute sponsored by the R and D Center and designed for both elementary and secondary school personnel. This institute was organized to coincide with the 1966 University of Wisconsin general eight-week summer session.

Six junior high school teachers and six senior high school teachers from the Madison, Racine, and West Bend school systems were enrolled in the summer institute for the purpose of preparing themselves to accept the responsibilities of Learning Specialists. Those responsibilities are outlined by Klausmeier as follows:

A. Instruction

1. Assume leadership in developing, executing, and evaluating an exemplary instructional program in the Unit, including objectives, materials, equipment, and activities. Here the learning specialist works closely with available subject matter specialists, the building principal, and others. The learning specialist is administratively responsible to the building principal.
2. Coordinate the diagnosis of learning problems of children and the development of appropriate individualized programs, so that each student learns well and simultaneously develops a buoyant and healthy personality. School psychologists, guidance workers, and others contribute to this area of concern.
3. Assume leadership in initiating, establishing, and maintaining good home-school relations. Social workers, and other specialists as available, can contribute as effectively or more effectively than when working with single teachers.
4. Teach about half time, or in other ways be directly involved with the children.
5. Utilize a portion of the remaining half time (a) to act as liaison between the building principal or staff and teachers (and students) in his Unit; (b) to meet with staff members in the Unit to plan instruction and to enhance the understanding of, and direction given to, individual pupils; and (c) to meet with other learning specialists.

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[1]Klausmeier, H. J., Cook, Doris M., Tagatz, G. E., & Wardrop, J. L. Project MODELS: A facilitative environment for increasing efficiency of pupil learning and for conducting educational research and development. *Working Paper No. 5.*

B. Research

1. Plan research activities in the R & I Unit with appropriate personnel from the Unit, the building, the central staff, and the R and D Center.
2. Coordinate the execution of research within the R & I Unit.
3. Guide the administration of experimental treatments—instructional methods, material, media—by sub-experimenters (teachers or others) to insure continuous adherence to the specified experimental design and to a schedule for collecting information.
4. Participate in the collection and, as time permits, the analysis of information collected.

C. Development

1. Plan the development activities with members of his Unit, the school staff, and the Center.
2. Coordinate the development of an exemplary instructional system within his Unit, including a statement of objectives, the assessment of the capabilities of students, the instructional program, and evaluating procedures.
3. Participate directly in preparing instructional materials, measurement instruments, etc.

D. Innovation

1. Coordinate the introduction of novel procedures and materials, particularly in connection with the development of an exemplary instructional system.
2. Stimulate the invention of new instructional procedures within the Unit.
3. Keep abreast of innovations throughout the school system, the state, and nation through visits, conferences, and reading.

E. Diffusion

1. Provide for the proper briefing of observers of the R & I Unit.
2. Participate in the planning and actual diffusion of promising practices within the school building and within the system as appropriate.[2]

In September, 1966, the twelve Learning Specialists who had participated in the summer institute were joined by three additional Learning Specialists; and in November two more Learning Specialists were added, bringing the total number of Learning Specialists in secondary schools to seventeen. These seventeen people were key factors in the establishment of R & I Units in the following schools, school systems, and subject matter areas:

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[2]H. J. Klausmeier, Project MODELS: Its inception and rationale, in Project MODELS: Maximizing opportunities for development and experimentation in learning in the schools. *Occasional Paper No. 3*, Research and Development Center for Learning and Re-Education, The University of Wisconsin, Madison, Wisconsin (1966), p. 5.

Silverbrook Junior High School	West Bend	math, science
Abraham Lincoln Junior High School	Madison	science, English
James Madison Memorial High School	Madison	English, science, social studies, math, physical education
Wilson Junior High School	Manitowoc	English
Marquette Junior High School	Madison	English-social studies
Starbuck Junior High School (Gr. 7)	Racine	English-social studies
Starbuck Junior High School (Gr. 8)	Racine	English-social studies

The organization of each of these Units is different because of the possibilities that various pupil and teacher scheduling permit and because of variations in the scope and sequence of existing school curricula. However, the objectives they pursue are concerned with the development of innovative instructional programs designed to permit research. More specifically their activities might be placed in the three different contexts of (1) developing a system of concept learning, (2) developing a system of individualization, and (3) developing a system of motivation. It is understood that the programs they develop will be subject to controlled research when it is deemed that such research can be meaningfully undertaken.

The following discussion describes the activities of the Units in their particular school settings. Both the development and research functions are presented. It should be noted that although no controlled investigation was attempted this first year, research has been a major consideration in all planning.

Abraham Lincoln Junior High School, Madison, Wisconsin

The R & I Unit concept moved naturally into Abraham Lincoln Junior High School in September, 1966. A new building principal and many new teachers had been recruited to effect an exemplary instructional program for this school which is heavily populated with Title I students in Grades 7, 8, and 9. Besides the forward-looking administration and capable teaching staff, this school has two outstanding instructional facilities to enhance any R & I Unit operations. These two facilities are the instructional materials center and the library. The personnel assigned to them work closely with other Unit members and thereby make the instructional materials center and the library integral parts of the instructional program.

Two teachers, new to this building, are designated as Learning Specialists, one in science and one in English. Both attended the 1966 summer institute and both have been assigned the task of developing the total-school instructional programs in their respective subject matter areas by the school administration. Their association with the Research and Development Center as Unit leaders affords them the opportunity of effecting this development with the aid of subject matter consultants from the Center. This association also provides opportunities for guidance in research appropriate to the needs of this school and relevant to cognitive learning. The development of science and English instructional programs in this school can then proceed on the basis of research findings.

Both the science Unit and the English Unit are emphasizing developmental activities and planning for research of instructional programs that will improve motivation and provide for individualized study within these two subject matter areas. Throughout the year considerable tangible evidence has been provided to indicate successful movement toward the desired objectives.

The science Unit has attempted to combine inductive and deductive learning in eighth grade general science classes. Emphasis is given to student involvement in individual projects that can be combined with other individual projects to form science class or science classes projects that can be displayed to any interested groups. There is considerable interaction among the students. The instructional materials center has been used extensively to help in the development of films of students experimenting and demonstrating the results of their experimentation, the development of a science club, and the presentation of a science fair that attracted one of the largest parent and total community audiences in the school's history. This Unit also has plans underway to study the effects of an introduction to the study of science via appropriate films and discussion of those films in Grade 7 on: (1) student attitudes toward studying science in the eighth and ninth grades and (2) the ability of students to interpret scientific reading matter in the eighth and ninth grades. This research is especially appropriate for the Madison school system because there is currently no science program in Grade 7.

The English Unit has involved all of the English teachers and has utilized the school's library resources extensively. Developing positive attitudes toward reading and listening have been the two specific foci of this Unit. Twenty-four particularly unmotivated students have been identified and individualized reading programs with high-interest reading materials have been designed for them. Developing listening skills and positive attitudes toward listening in school situations have been identified as problems which can be researched in that school setting. Consequently, a research study concerned with this area of the curriculum is being prepared. Material judged by the teachers to be of high interest to junior high school students is being tape recorded from radio programs, television programs, phonograph records, popular teachers, townspeople, etc. This recorded material is being organized and appropriate narration is being added. The resultant products are being pilot-tested with selected students from this school with inventories designed to measure the students' affective responses to the tapes. In this way a library of high interest listening materials is being developed. It is planned that these materials will be used to research the effects of different instructional strategies on the development of positive attitudes toward listening and on the development of specific listening skills. This Unit is also preparing to participate in research concerned with transformational grammar and cognitive learning. This will be discussed in detail in Section IV of this paper.

James Madison Memorial Junior-Senior High School, Madison, Wisconsin

This school is also particularly well suited to the kind of operation suggested by the R & I concept. This is true of the physical design of the plant, the administrative philosophy, the high

level of competence in the teaching staff, and the unique organization of that staff. It is pertinent to add that the prevailing feeling toward research in this school is that research is a vital aspect of educational progress and a legitimate function of the classroom teacher.

The school opened September 1966. The building had been designed to facilitate large and small group instruction and independent study. The principal was committed to the establishment of new instructional patterns and research of those patterns. The staff had been selected by him in terms of their ability to participate in flexible, innovative instructional programs.

The principal is the head of the curriculum and instructional program and has freed himself from administrative responsibilities not concerned with curriculum and instruction. He has done this by delegating these responsibilities to a "house master" in both the junior and senior high school. To aid him in his leadership role he has selected outstanding teachers in each of the areas of English, science, social studies, physical education and mathematics to serve as "curriculum associates." These people have half-day teaching responsibilities and spend the remainder of their time in curriculum development, instructional planning, and supervision of the teachers in their departments.

These curriculum associates were logical candidates for leaders of R & I Units and were designated as such. This affords them the advantages of access to University consultants in curriculum and instruction, subject-matter areas, and research and design.

In addition to their teaching, supervisory, and development work, each of the curriculum associates spends time with R and D Center personnel planning for research in his subject matter area. This research is to investigate innovative instructional programs also designed in cooperation with R and D Center personnel.

In the area of science there is considerable concern with the readability levels of science materials currently being used by students. Consequently, readability formulas were used to determine readability levels of the various materials in use. These readability formulas were revealing but unsatisfactory because of their inability to take into account the difficulty level of the concepts presented. Therefore, initial plans were made to research the possibility of assessing readability level of science materials in terms of the difficulty of the concepts presented rather than in terms of the number of syllables per word and number of words per sentence. The correlation between motivation toward studying science and the comprehension of science materials is also being considered as a possibility for research. In addition to the specific concern with readability of science materials there is also considerable activity directed toward development of a science program that utilizes different student groupings and provides for independent study.

In the area of mathematics there is developmental activity designed to move the mathematics program in the direction of increased independent study. There has been initial planning with R and D personnel regarding a research study to investigate the results of using programed learning materials designed by the Unit leader on the problem-solving ability of ninth-grade students of mathematics. Programed learning materials have been designed with two different kinds of directions: (1) printed as introduction to the materials and as transitions between frames and (2) tape-recorded as introduction to the materials and as transitions between frames. Planning is underway

to investigate the relative effects of both approaches on students judged to be good readers and students judged to be poor readers. The materials attempt to direct students through various problem-solving exercises. The effectiveness of each approach will be evaluated in terms of specially prepared tests constructed to measure attainment of mathematics concepts through problem-solving cognitive behavior.

The social studies teachers with the guidance of the social studies Unit leader have been especially concerned with the effects of small and large group instruction on the learning of social studies concepts. A study is being planned that will investigate the effects of in-service training of teachers in the construction of questions at various cognitive levels on subsequent teacher performance in classroom situations and ultimately concept attainment in students. Questions and evaluation instruments are being constructed and a research design is being considered with the guidance of R and D Center personnel.

The English teachers at James Madison Memorial are also attempting to individualize their instructional program. In addition to this they have become interested in the new grammars. From an informal observation of the reactions of eleventh-grade students to studying language via transformational grammar, they concluded that student attitudes toward studying transformational grammar were more negative than positive. They are planning now to investigate transformational grammar materials prepared by Professor Nathan S. Blount of the R and D Center with junior high school students. More will be written about this proposed study later in this paper.

The physical education department is likewise attempting to move into more independent study projects for physical education students. The objective of these projects is student attainment of concepts pertaining to health and physical fitness. The Unit leader is helping teachers in his department to collect materials and to employ teaching techniques that will aid in the development of concepts relevant to the area of physical education.

Marquette Junior High School, Madison, Wisconsin

Marquette Junior High School is heavily populated with Title I students. The principal assigned to this school is eager to discover new ways of meeting the educational needs of culturally deprived students. The organizational plan of the R & I Unit established for this school is to have a team of persons consisting of a science teacher, two social studies teachers who are also part-time reading teachers, a full-time reading teacher, and a social worker, all under the direction of a Learning Specialist, plan together and coordinate their activities to effect a consistent approach to meeting the various needs of these deprived students. The planning of the "core" group frequently extends to other teachers to whom these students are assigned so that each student's entire instructional program is consistently implemented to meeting cooperatively planned objectives. Since reading is a major problem with these students, the planning is frequently concerned with teaching reading skills and motivating for reading in every class as well as attempting to improve the home situation in a way that will have a positive effect on reading skills and attitudes. Although controlled re-

search was not specifically planned for this year, the motivational possibilities of Controlled Readers are being investigated informally and with guidance from R and D Center personnel.

Washington and Wilson Junior High Schools, Abraham Lincoln Senior High School, Manitowoc, Wisconsin

This Unit in English includes personnel from three schools. The Unit leader is an experienced senior high school teacher who has been active in the implementation of a new literature program designed especially for Grade 10. The cooperating teachers in the Unit are two junior high school English teachers in their first year of teaching. The primary concern of this Unit is to experiment in the junior high school with preparing students for the new Grade 10 literature program and thereby develop an instructional program that moves easily from junior high school to senior high school. Inasmuch as those concerned with the Grade 10 English program are satisfied that the current program is meeting the school's objectives for the study of literature, the concern of the R & I Unit is how best to prepare junior high school students for their senior high school literature program. This is why the combination of a senior high school teacher and junior high school teachers is advantageous.

The distinguishing characteristic of the Grade 10 literature program is its non-prescriptive nature. Paperbacks are used in place of the traditional anthology, and students are free to select what they will read on a completely individualized basis. Teacher guidance is available, but there are no prescribed selections to be read. An informal assessment of student attitudes toward the program is obtained. The basic requirement is that students spend their literature period reading paperbacks of their own choosing.

The three teachers involved spend most of their conference time exploring methods for discovering students' reading preferences and for motivating students to sample suspected preferences Charts are being devised that will enable students to visualize the range of their reading experiences, to recognize thematic relationships among different books, and to select future reading matter on the basis of past reading experiences. No controlled research is being conducted, but with the help of R and D Center personnel a number of research possibilities have been identified and possible research designs considered.

Starbuck Junior High School, Racine, Wisconsin

Starbuck Junior High School is also a favorably designed facility, administered and staffed to participate in development and research activities of the kind incorporated in the R & I concept. The R & I concept involves cooperative effort from classroom teachers, and Starbuck Junior High School is committed to and a strong supporter of team teaching. Therefore, a teacher organizational pattern consistent with the R & I concept was already operating smoothly when this school affiliated with the R and D Center.

Two teams are operative in this school. Both are comprised of English and social studies teachers and operate within the content of those two subject matter areas. One team works at the

seventh-grade level and the other at the eighth-grade level. Both teams have considerable freedom in the content they select to teach and the methodology they use to teach it. Both are concerned with structuring the best kinds of student groupings for the objectives they have to achieve.

The eighth-grade team has been functioning for approximately five years and has been able to minimize the various administrative and organizational problems that occur in a team-teaching situation. Implementing their instructional program is no longer a major problem for this group; therefore, they are "ready" for innovation and research activities. This readiness plus the ease of grouping students and teachers in their team organization are vital factors in the successful implementation and further development of the R & I concept.

Two projects are being undertaken by the eighth-grade team at Starbuck. The major thrust will be given to a study of concept learning in junior high school students using transformational grammar as a medium for investigation. This is the same project that previously was mentioned in connection with projections for Abraham Lincoln Junior High School and James Madison Memorial Junior High School. A second study is in preparation; and, although it will not have the import of the transformational grammar study, it will serve to investigate an area of interest to the team and to acquaint the team members with research procedures. This second study proposes to investigate the effect of four different instructional approaches to the study of the novel ***Johnny Tremain*** on student attitudes toward that novel and on student comprehension of that novel.

The four different instructional approaches being investigated are the following:

1. Teacher-directed discussion of the story on a chapter by chapter basis.
2. Chapter by chapter programmed learning approach to studying the story. The materials will be teacher-prepared.
3. Free reading with no guidance after an initial introduction to the story.
4. Student-led small group discussions of the story on a chapter by chapter basis with student leaders using teacher-prepared discussion questions.

The team members are constructing an attitudinal inventory under the guidance of R and D Center staff and will be helped to identify suitable items from a previously used comprehension test. Data collection, analysis, and interpretation will be guided by R and D Center personnel.

The seventh-grade team is preparing to participate in the transformational grammar study next year. Their members have participated in seminars and other meetings sponsored by the R and D Center for the purpose of acquainting teachers with new curriculums and materials being developed for language instruction generally and transformational grammar specifically.

Silverbrook Junior High School, West Bend, Wisconsin

This school is physically designed to facilitate independent study. Well-equipped instructional materials centers are in prominent positions in the school and are organized so that with a minimum of teacher assistance students can select and use the materials relevant to their particular study concerns.

Although the West Bend school system is relatively small, it has long been considered a leader

in Wisconsin secondary school education. It has well-trained and forward-looking teachers and administrators. Therefore, the educational objectives of the R and D Center are in harmony with the objectives of this school system generally and Silverbrook Junior High School specifically.

Four persons from the teaching staff of this school are designated as R & I Unit leaders. One acts as a coordinator throughout the entire school; one concentrates on the subject matter area of mathematics; one works in the area of science; and one divides his time between the areas of mathematics and science. There are some concerns which all four hold in common. They hope to orient the teaching staff to teaming for instructional planning and execution. They also hope to aid in the total school movement toward increased independent study. And they are interested in identifying, constructing, and organizing materials to be used by students engaged in independent study.

The Unit leaders who work in the area of mathematics are focusing their attention on the orientation of teachers in the mathematics department to the teaming aspect of the R & I Unit concept. They work with teachers in such things as cooperative evaluation of instructional materials and cooperative evaluation of individual student progress. Considerable emphasis is given to the development of a suitable mathematics instructional program for students who are poorly motivated toward studying mathematics.

The Unit leaders who work in the area of science are also concerned with orienting teachers to cooperative planning and teaching. Two objectives receive major attention from this group: (1) developing programmed learning materials for use in seventh- and eighth-grade science classes and (2) individualizing classroom instruction through extensive use of the instructional materials center.

III

SUMMARY

Historically, the secondary school has not been so receptive to change as the elementary school. This is in part because the organization of the secondary school has been strongly influenced by its college preparatory function and consequently has used the college organization as a model. However, secondary schools have been developing new images that give them identities of their own. The introduction of R & I Units into the high school setting is an aid to the emergence of these new identities.

The 1966-67 school year was an exploratory year for all personnel concerned with R & I Units in the secondary school. The year's achievements might be attributed to their confidence in the R & I concept and their consequent willingness to initiate specific kinds of educational innovation. There was no attempt to impose a particular pattern of organization or operation on a specific school. Rather, each involved school was encouraged to explore the unique possibilities it offered for development and research.

This "individualized" exploration by the various schools has served to illustrate the many different kinds of patterns within which R & I Units can be effective at the secondary school level. This year's exploration has indicated that R & I Units need not, and indeed should not, be intro-

duced with a specific operational prescription. Perhaps the greatest ultimate benefit to education occurs from the process that involves the cooperative efforts of classroom teachers, school administrators, and university personnel in a search to find the best pattern for a specific school.

Although the R & I Unit is flexible, several characteristics seem essential to its success in every secondary school setting. Since the participants in each unit are drawn from the classroom teaching staff, the building administration, the central staff, and the R and D Center, it is essential that frequent and accurate communication occurs among all participants. It is important that the various responsibilities of the participants be understood by all concerned. Because cooperative planning and teaching is basic to the R & I concept, it is essential that participants be agreeable to and capable of effecting interpersonal relationships in matters of planning and teaching. Since innovation is also basic to the R & I concept, it is imperative that only people who feel positively about changing the educational structure become involved in key roles. And since the R & I concept involves physical facilities and scheduling that permit flexibility of student groupings and time for cooperative teacher planning, it is imperative that the necessary physical facilities and schedules be provided before the Unit becomes operative.

The work of this initial year for R & I Units in secondary schools has provided many rewarding experiences for teachers, public school administrators and R and D Center personnel. Many questions still remain to be explored, but many people are eager to explore them. Therein lies the essence of Project MODELS—continuous growth through research, development, and new research.

IV

PROJECTION

During the 1966-67 school year the focus of the R and D Center was sharpened considerably. The effect of this on R & I Units in the secondary school will be to narrow the scope of R & I Unit operations in terms of subject-matter areas involved, number of schools involved, and academic levels involved.

More specifically, R & I Unit activity in secondary schools will be concerned primarily with developing a system of concept learning in junior high school English using newly developed transformational grammar materials as the immediate object of study. Dr. Nathan S. Blount and Dr. Robert C. Pooley will direct these research and development activities cooperatively with school personnel. This is a particularly appropriate combination of personnel since Dr. Pooley, as director of Project English in Wisconsin, has been developing language curriculum and Dr. Blount, as a principal investigator for the R and D Center, has been developing programed learning materials in transformational grammar.

Planning of this project is proceeding cooperatively with James Madison Memorial Junior High School, Madison; Abraham Lincoln Junior High School, Madison; Starbuck Junior High School, Racine; and Washington Junior High School, Manitowoc. A workshop was held for selected teachers at the R and D Center June 19–23, 1967. This workshop was conducted by Dr. Pooley and Richard Smith with Dr. Blount serving as a consultant.